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ABSTRACT

In a helium 3 refrigerator-utilizing magnetic property measurement system which enables magnetization measurement to be effected till 0.3 K by utilizing the formerly proposed magnetic property measurement system (MPMS), a main pipe 23, for the object of enabling magnetization measurement to be infallibly effected even when the upper limit of magnetic field the MPMS can induce is applied, includes an upper supporting tube 41 positioned in the uppermost part and allowing a bellows 28 to be connected to the lateral part thereof, a condensing tube 42 supported fast in the lower part of the upper supporting tube, an outer tube 44 fixed in the lower part of the condensing tube and adapted to form an outer wall of an insulated vacuum chamber 43 formed between the outer tube and a lower inner tube 45 forming an inner wall of the insulated vacuum chamber 43. In each of the tubes, the lower inner tube 45 is formed of titanium. As a result, the background signal can be decreased and the measurement can be infallibly effected till the upper limit of magnetic field of the MPMS. The upper supporting tube 41 is formed of s.s. and the condensing tube 42 and the lower outer tube 44 are formed of copper excellent in thermal conduction.